

Information to Include in the Application

- A. **Title:** (select one of the following:)
1. Application for Permit for Scientific Purposes under the Endangered Species Act of 1973.
(e.g. for field surveys, genetics research, etc.)
- B. **Species:** List all species and/or populations and/or Evolutionarily Significant Units (ESUs) for which you request take authority.
Lower Columbia River Chinook salmon ESU
Lower Columbia River steelhead ESU
Columbia River chum salmon ESU
Lower Columbia River Coho ESU
- C. **Date of Permit Application:** Jan. 28, 2004
- D. **Applicant Identity:** The applicant is the individual and/or agency responsible for ensuring compliance with permit conditions, and may represent a group of individuals actually performing the activities (e.g., employees, partners, agents, and/or contractors). Please include the following information about the permit applicant:
1. Applicant's name and position title;
Ian R. Waite, biologist
 2. Institution or agency name;
U.S. Geological Survey
 3. Mailing address; and
10615 SE Cherry Blossom Dr., Portland, OR 97216
 4. Telephone and Fax number; and E-mail address.
503.251.3463, 503.251-3470, iwaite@usgs.gov
 5. If NMFS should be coordinating with a contact person different from the applicant, please also include the same information (1-4 above) for the principal contact.
- E. **Information on Personnel, Cooperators, and Sponsors.** (If the same person or entity will hold several roles, you may state their address information once and refer back to it).

1. If the applicant will not be the sole person conducting the proposed activities, provide the names, phone numbers, and résumés for each Principal Investigator and Field Supervisor. A Principal Investigator is ultimately responsible for the project and compliance with the permit conditions. A Field Supervisor (who may also be the Principal Investigator), is anyone who supervises or carries out the activities in the field without supervision, and will also be responsible for compliance with the permit conditions.

None

2. To the extent possible, provide a list of field personnel.
Kurt Carpenter, Andy Arnsberg, Mike Sarantou
USGS
3. Please identify the secured or proposed funding source(s) for the proposed activities, including names, addresses, and phone numbers of the sponsors, cooperating institutions, etc.
National Water Quality Assessment Program of the USGS,
a national water quality program of the USGS, direct congressional funding (NAWQA).
More information about the NAWQA program can be found at
<http://water.usgs.gov/nawqa/>
4. If the proposed activities will be conducted by a contractor, provide a statement that a qualified member of your staff (include name(s) and qualifications) will supervise or observe the taking. Include a copy of the proposed contract or a letter from the contractor indicating agreement to operate under any and all permit conditions, should a permit be granted.
none
5. Provide a description of the arrangements for the disposition of any tissue samples, dead specimens, or other remains, either in a museum or other institution, for the continued benefit to science. Include the list of researchers, laboratories, museums, and/or institutional collections that would receive these tissue samples or specimens. Please include name, address, contact, and phone number for each.
Voucher specimens will be housed at OSU Fish Museum – Dr. Doug Markle, Dept. of Fisheries and Wildlife, Oregon State University, Corvallis, OR. Voucher only non-game species.
6. For transport and long-term holding of listed species, please provide the qualifications and experience of all staff responsible for care without supervision, including a written certification from a licensed veterinarian

knowledgeable about the requested species (or similar species), or from a recognized expert on the species (or similar species) that he/she has personally reviewed the criteria for transporting and maintaining the animal(s) and that in his/her opinion they are adequate to provide for the well-being of the animal. Include the name and phone number of this veterinarian, consulting expert, or equivalent who will be available during the proposed activities.

none

F. **Project Description, Purpose, and Significance:** Please describe the purpose of your study or project. If available, please attach a copy of the formal project proposal or contract, including the contract number, to your application. You may reference the appropriate section of the proposal/contract in response to a particular question.

1. A justification of the objective(s): motivation, history, goals, etc., and how the wild populations of the species will benefit from the proposed activities;
The focus is on urban landuse: sample 30 small streams across an urban intensity gradient from high urban intensity to low urban intensity. Some of these sites we have sampled before a few times and some are long-term NAWQA trend sites. **Project Description:** We are sampling 30 streams sites to assess the effects of urban land use and to determine what the response along an urban index for biological, physical and water quality measures. We are sampling each site for algae, macroinvertebrates, fish, habitat, water chemistry as well as temperature and hydrologic variability or flashyness. This is part of a national study within the USGS and is one of 9 study areas in urban systems nationwide. Results from this study will be analyzed locally to provide a local assessment (how do urban streams within the Willamette Basin compare to each other and how are they affected by urban landuse) as well as folded into regional and national analyses to determine a national assessment (ex. PNW regional analysis of affects of urban landuse on streams or national analysis of urban landuse). This research will help society manage streams affected by urban landuse and possibly help focus where rehabilitation can be the most effective, this could greatly help listed species.
More information about the NAWQA program can be found at <http://water.usgs.gov/nawqa/>
2. A statement of whether the proposed project or program responds directly or indirectly to a recommendation or requirement of a Federal agency (Include citations if applicable);
This research is part of NAWQA a national program of the USGS, that is an ongoing water quality program with direct funding from congress, design to assess the nation's waters for water quality including biological integrity. The program is reviewed by the National Academy of Sciences.

3. A statement of whether the proposed project or program has broader significance than the individual project's goals, or is part of a larger scale research management or restoration plan (Include citations if applicable); Yes, it is part of a national program and is one of nine Urban Landuse gradients being studied. The research is assessed/analyzed locally as well as regionally and nationally.
4. A description of any relationships or similarities of the proposed activities to other proposed or ongoing projects and programs, and whether the potential exists to cooperate and coordinate with other similar studies or activities. (Include citations if applicable); and
None locally
5. A justification for using listed species in the study or activities, and a discussion of possible alternatives to using listed species and/or to using the proposed methods. If applicable, you should try to anticipate alternative scenarios due to circumstances such as changes in environmental conditions, annual variations in species abundance, necessary changes in proposed procedures, etc. Such scenarios should be addressed in **Description and Estimates of Take** below if they affect the nature or amount of potential take of listed species. This planning may avoid the potentially lengthy process of modifying the permit.

A full assessment of the fish assemblages at each stream is necessary to understand the biological integrity of the systems, these streams will only be electrofished one day using backpack methods. Understanding the biological integrity is necessary for assessing the water quality of the streams and how it relates to the Urban landuse. This is critical. Fish assemblage data is being collected at sites across the United States and is critical for local, regional and national analyses/assessments.

G. **Project Methodology:** Please provide a detailed description of the project, or program, in which the listed species is to be used, including:

1. The proposed duration of the project or program, including start and end dates.
The biological sampling will start in June and end in late September 2006. 30 streams will be sampled this year, 2004 (26 in Oregon, 4 in WA) but no streams in WA in 2005 or 2006.
2. A discussion of the procedures and techniques which will be used during the project. The discussion should include, at a minimum:

- a. Method(s) of capture and of release; Two pass/removal backpack electrofishing, fish are then carefully measured and weighed and released unharmed. This is part of NAWQA's biological protocol and must be followed so that local data is comparable nationally. Measuring and weighing fish allows us to understand the health of the fish community better via condition factors, etc.
 - b. A description of any tags, including the attachment method, location, and expected duration of tag attachment;
none
 - c. A description of type and dosage of any drugs to be used, purpose of use, and method of application;
We use CO₂ to calm the fish for measurements. We use CO₂ tablets in a 5 gallon bucket with small numbers of individuals at a time which are then handled quickly and returned to a recovery bucket with pumped oxygen before returning them to the stream.
 - d. Temporary holding time prior to release of the individual(s) and the manner in which they will be detained (for transport and long-term holding, please fill out the section on **Transport and Holding**); and
The fish are held within the stream in flow-through containers so that they are kept at proper temperatures and provided plenty of oxygen. Fish are kept out of direct sun, then processed quickly so that they can be returned to the stream unharmed. The fish holding containers are continuously monitored so that all fish are safe from predators or other potential problems.
 - e. Number and types of samples to be taken from each individual, including sampling protocol.
Only 30 fish of each species are measured and weighed the others are just identified and released. All species are measured and weighed as part of NAWQA's national protocol.
3. A discussion of the potential for injury or mortality to the species involved, and the steps that will be taken to minimize adverse effects and to ensure that the species will be taken in a humane manner.
There is a small chance of minor injury or rare mortality due to the electrofishing, however, this is kept to a minimum by using the lowest settings that allow us to still properly collect the fish.
We will follow NMFS electrofishing guidelines and only experienced fish biologists will handle listed fish.

- H. **Description and Estimates of Take:** Issued permits define a specific number of individuals of each species that can be taken within the approved study or project. You must provide sufficient detail (in the table or in narrative) for NMFS to determine the species, population group, and estimated number of individuals to be "taken" due to each activity. You should also describe the specific age, size, (and sex, if appropriate) of the listed species targeted. Please take into account alternative scenarios identified above in **Project Description, Purpose, and Significance**.

The description of the listed species to be taken during the proposed activities should include the following:

1. A list of each species and/or population and/or Evolutionarily Significant Unit to be taken including the common and scientific name. Include specific population or sub-population groups if appropriate.
We are planning to sample four streams in the Vancouver, WA area, so all are within the Lower Columbia Chinook, Chum and Steelhead ESU's. However, since we will only be sampling during the mid-summer period, we will not have any take on adults nor take for juvenile Chinook or Chum which should have migrated already. The only realistic take is for juvenile steelhead.

Lower Columbia River Chinook salmon ESU

Lower Columbia River steelhead ESU

Columbia River chum salmon ESU

Lower Columbia River Coho ESU

2. The sampling schedule, including locations and dates if available. Be as specific as possible. Locations should be listed from general to most specific, including bodies of water, rivers, tributaries, streams or creeks, and a geographical descriptor (e.g., Columbia River, Snake River, Imnaha River, River Mile 42 or Gulf of Mexico, Louisiana Coast, Sabine Pass). Include latitude/longitude coordinates, if possible.

The four streams in Vancouver include: name and lat/long

Rock Creek near Battleground, WA	455122122310600
Salmon Creek near Battleground, WA	454549122295800
Whipple Creek near Salmon Creek, WA	454510122424900
Curtin Creek near Vancouver, WA	454321122352300

Note: Only a few select streams (only 4-5 streams) will be sampled in 2005 and 2006, and none of these are in WA.

3. A description of the recent status and trends of each species and/or population and/or ESU to be taken, relative to the location(s) or area(s) of taking. (Include citations if available).
No listed species are expected to be encountered except possibly steelhead trout juveniles.
4. A description and/or completed summary table (see attached example) of estimated take per annual period, for your activities at each discrete location and/or for each project. Please separate take information into “species profiles”– groups of individuals with the same characteristics that will be undergoing the same procedures (see b-h below). Make sure you do not double-count-- if you propose to capture 50 animals, and tag 5 of those, you should list 45 animals to be captured, and 5 to be captured & tagged. Each “species profile” should include:

The take information is the same for all four creeks: see attached table.
Fish may be hatchery or wild, though most of the populations are made up of hatchery fish, so the chance of encountering wild juvenile steelhead or salmon may be reduced.

- a. Number of individuals;
 - b. Species and/or population and/or ESU;
 - c. Life stage (such as post-hatchling, fry, smolt, juvenile, immature, adult, etc. (note if live or dead))
 - d. Sex (if known);
 - e. Origin (if applicable, naturally-produced (wild) or artificially-propagated (hatchery));
 - f. Take activity category (such as observe/harass; capture and handle; etc.);
 - g. Location (if more specific than the project as a whole); and
 - h. Date(s) (if more specific than the project as a whole).
5. Estimates of potential annual mortalities by take category, including a justification. You should specify the life stage of the potential mortalities, sex if known, and whether naturally-produced (wild) or artificially-propagated (hatchery). Mortality estimates should be specific by population; by the activity causing the mortality; and/or by location when known. You should specify whether mortalities will be intentional (direct mortality) or unintentional (indirect mortality).

Any mortality of listed species is accidental and due to electrofishing or handling stress, mortalities will be kept at the absolute minimum.

6. Provide details on how all take estimates, including mortalities, were derived. Include citations when applicable.

Estimates from sampling similar sized streams within the Willamette Valley over the past 10 years.

I. **Transportation and Holding** **NONE**

1. **Transportation of a Listed Species:** Provide a description of how any live individuals taken from the capture site or other facility (including rescue and relocation activities) will be transported including:
 - a. Mode of transportation and name of transportation company, if applicable.
 - b. Length of time in transit for the transfer of the individual(s) from the capture site to the holding facility or to the target location.
 - c. Length of time in transit for any planned future move/transfer of the individual(s).
 - d. The qualifications of the common carrier or agent used for transportation of the individual(s).
 - e. A description of the pen, tank, container, cage, cradle, or other devices used, both to hold the individual(s) at the capture site and during transportation.
 - f. Special care before, during and after transportation (e.g., use of oxygen, temperature control, anesthetics, antibiotics, etc.)
2. **Holding of a Listed Species:** Describe the plan for care and maintenance of any live individuals, including a complete description of the facilities where any such individuals will be maintained including:

All fish are only held within the stream for a very short period of time, see methods above.

- a. The dimensions of the pool(s) or other holding facilities and the number of individuals, by sex, age, and species, to be held in each.
- b. The water supply, amount, and quality, including controls on temperature and dissolved oxygen.

Air pumps are used to increase oxygen supply.
- c. The amount and type of diet used for all individuals, and food storage.

d. Sanitation practices used.

3. **Emergency contingencies:** Identify emergency contingencies- e.g., backup life support systems, alarm systems, redundant water and oxygen supply, release or destroy decision chains, etc.

- J. **Cooperative Breeding Program:** You must include a statement of willingness to participate in a cooperative breeding program and to maintain or contribute data to a breeding program, if such action is requested.
We are willing to cooperate in a breeding program and maintain or contribute data to the program, if requested.

- K. **Previous or Concurrent Activities Involving Listed Species:**

1. Identify all previous permits where you were the permit holder or primary investigator working with federally-listed species. Please identify which species.

ODFW and NMFS permits within Oregon for all species listed in this application.
OR2004-1765 Ecological assessment of small streams along an urban landuse gradient in the Willamette NAWQA basin.

2. For the above permits, please list all mortality events of listed species which have occurred in the last five years.

- a. List the species, including scientific name and population where applicable; See OR2003-970 = 1 Upper Willamette River steelhead mort reported in Little Abiqua Creek near Scotts Mills.
- b. Describe the number and causes of mortalities; and
OR2003-970 = 1 Upper Willamette River steelhead mort reported in Little Abiqua Creek near Scotts Mills. Due to electrofishing.
- c. Describe the measures that have been taken to diminish or eliminate such mortalities, and the effectiveness of those measures. Follow proper electrofishing guidelines.

- L. **Certification:** You must include the following paragraph, exactly as worded, followed by the applicant or responsible party's name, position title, signature and date:

"I hereby certify that the foregoing information is complete, true and correct to the best of my knowledge and belief. I understand this information is submitted for the purpose of obtaining a permit under the Endangered Species Act of 1973

(ESA) and regulations promulgated thereunder, and that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001, or to penalties under the ESA."

Signature

Date

Name and Position Title

- M. **Length of Time and Cost to Prepare Application (Optional):** The public burden of these application instructions is evaluated periodically by the Office of Management and Budget under the Paperwork Reduction Act. Your response will help improve the accuracy of the estimates given for evaluation. You may send comments regarding this estimate or any other aspect of this information collection, including suggestions for reducing this burden, to the Chief, Endangered Species Division, at the address under "**Where Do I Send the Application?**"

1. Please estimate the length of time, in hours, it took to compile this application.
2. Please estimate the cost, in \$US, of compiling this application, excluding the labor hours identified in 1. above. This estimate should include: cost of paper, printing, mailing, photocopying, etc.

Site Name	Species	Numbers	Age Class	Take	Origin
Rock Creek near Battleground, WA	L. Col. Chinook	2	juv	capture and handle	wild
	L. Col. Chum	2	juv	capture and handle	wild
	L.Col. Steelhead	50	juv	capture and handle	wild
	L. Col. Coho	20	juv	capture and handle	wild
	L. Col. Coho	1	juv	mortality	wild
	L.Col. Steelhead	1	juv	mortality	wild
Salmon Creek near Battleground, WA	L. Col. Chinook	2	juv	capture and handle	wild
	L. Col. Chum	2	juv	capture and handle	wild
	L.Col. Steelhead	50	juv	capture and handle	wild
	L. Col. Coho	20	juv	capture and handle	wild
	L. Col. Coho	1	juv	mortality	wild
	L.Col. Steelhead	1	juv	mortality	wild
Whipple Creek near Salmon Creek, WA	L. Col. Chinook	2	juv	capture and handle	wild
	L. Col. Chum	2	juv	capture and handle	wild
	L.Col. Steelhead	50	juv	capture and handle	wild
	L. Col. Coho	20	juv	capture and handle	wild
	L. Col. Coho	1	juv	mortality	wild
	L.Col. Steelhead	1	juv	mortality	wild
Curtin Creek near Vancouver, WA	L. Col. Chinook	2	juv	capture and handle	wild
	L. Col. Chum	2	juv	capture and handle	wild
	L.Col. Steelhead	50	juv	capture and handle	wild
	L.Col. Steelhead	1	juv	mortality	wild
	L. Col. Coho	20	juv	capture and handle	wild
	L. Col. Coho	1	juv	mortality	wild